

Work Order ID 59467

June 4, 2010 12:07:41 PM



Page 1

Item ID: D6102-013

Accept



Setup Start



Revision ID:

Stop



Item Name: Saddle Billet

Start Date: 6/04/10 Start Qty: 30.00



Cust Item ID:

Required Date: 6/18/10 Req'd Qty: 30.00



Customer:

Reference:

Run Start



Approvals: Process Plan: CL Date: 10/16/17

Tooling:

Date:

QC: _____

Date:

SPC (Y/N): _____

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6102	Rev D								

100

0.00



Purchasing

PURCHASING

Memo

0.00

Purchasing

Issue P/O: PO 12027 Description: Aluminum Billet ☐ b) 7.000" x 6.500" x 2.000" thick ☐ c) Tolerance on all dimensions is +0.06/0.00 ☐ d) Grain direction along 6.500" length ☐ e) Material: 6061-T6/T6511 (QQ-A-250/11 or QQ-A-200/8) ☐ Material release certifi

CL 10-6-01 (30)

110

0.00



Packaging

Receive & Inspect for Damage & Mat'l Certs

Memo

0.00

Packaging

Ensure material certification is attached

PO 10/6/16 (30)

120

QC6- Inspect dimensions to drawing

0.00



QC

Memo

0.00

Quality Control

Check certification to Dwg D6102 for compliance

Siobalir

BS 10/06/17

count
(30)

(30)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 59467

June 4, 2010 12:07:41 PM



Page 2

Item ID:	D6102-013	Accept		Setup	Start	
Revision ID:						
Item Name:	Saddle Billet				Stop	
Start Date:	6/04/10	Start Qty: 30.00		Cust Item ID:		
Required Date:	6/18/10	Req'd Qty: 30.00		Customer:		
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 	Identify as per dwg & Stock Location: <u>C.N.C</u>	0.00							
Packaging	Memo	0.00				<u>30</u>			
Packaging									
140 	QC21- Final Inspection - Work Order Release	0.00							
QC	Memo	0.00							
Quality Control									

10/06/17 *[Signature]*
CZ10/6/17

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June 4, 2010 12:07:40 PM

Page 1

Work Order ID: 59467



Parent Item: D6102-013



Parent Item Name: Saddle Billet


Start Date: 6/04/10

Required Date: 6/18/10

Comments: IPP Rev:A New Issue 06-07-03 JLM

Start Qty: 30.00

Required Qty: 30.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6102-013P  6061-T6 7.0x6.5x2.0		Purchased	No			110	Each	0.0000	1	30		6/6/10 (30)	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

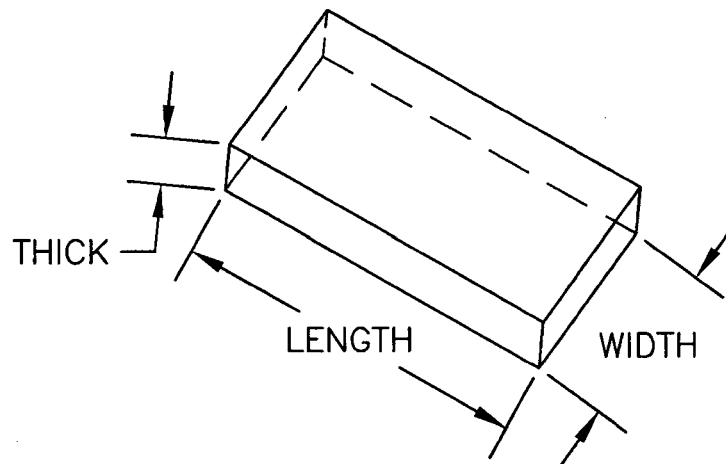
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART

DESIGN #	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED CP	APPROVED #	DRAWING NO. D6102	Rev. D SHEET 1 OF 1
DATE 06.06.30		TITLE SADDLE BILLET, 6061	SCALE NTS
A	01.03.30	NEW ISSUE	
B	03.10.20	ADD D6102-005/-007/-009	
C	04.08.25	ADD D6102-010/-011	
D	06.06.30	ADD D6102-013	

SPECIFICATION CONTROL DRAWING



CL 10/6/04
WD: 59467

RELEASED

06.08.15 #

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.06/-0.00), AND GRAIN DIRECTION AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.06/-0.00.

ALL DIMENSIONS ARE IN INCHES.

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6102-001	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.880	6.250	2.000	Along 7.880 Length
D6102-003	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.000	6.250	2.000	Along 6.000 Length
D6102-005	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	47.85	15.250	1.000	Along 47.85 Length
D6102-007	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.500	7.000	2.500	Along 7.500 Length
D6102-009	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	11.000	6.000	5.000	Along 11.000 Length
D6102-010	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.950	8.250	2.500	Along 7.950 Length
D6102-011	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.500	8.250	2.500	Along 6.500 Length
D6102-013	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.500	7.000	2.000	Along 6.500 Length

Copyright © 2001 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO12027**

Purchase Order Date 6/4/2010

PO Print Date 6/4/2010

Page Number 1 of 1

Order From :

VC-MET001

METAUX CASTLE

A.M. CASTLE & CO. (CANADA) INC. - BOX B9204 PO BOX 9100

TORONTO, ON M4Y 3A5

CA

Contact Name

Vendor Phone

514 694 9575

Vendor Fax

514 695 3281

Vendor Account Nbr

Buyer

Brigitte Golden

Requisition Nbr

Tax Resale Nbr

10127-2607

Terms

Net 30

Currency

CAD

FOB

Ship To :

DART AEROSPACE LTD

1270 ABERDEEN

HAWKESBURY, ON K6A 1K7

CANADA

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D6102-013P	6061-T6 7.0x6.5x2.0	6/18/2010 Yes	30.00 Each	Yours ppd	\$28.8500	\$865.50

Special Inst: Aluminum Billet, 7.000 x 6.500 x 2.000
Thick. Tolerance on all dimensions is
+0.06/0.00. Grain direction along 6.500"
length.
Mat: 6061-T6/T6511 (QQ-A-250/11 or QQ-
A-200/8)

PO Total:

\$865.50

Change Nbr: 1

Change Date: 6/4/2010

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required when applicable

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Shipment No: 375866

Ship From: Castle Metals MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 15-JUN-10	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier MANITOULIN		BOL No 375866-2	

Shipment Details**Final Destination Branch - MON**

Order No 797753	Line No 1	Item No 8641.MO	Description 2.0000.PL.6061.T651.ALUMINUM.48.5000.144.5000 CUT 2SIDED TO 7 IN (+ .0620/- .0000 IN (grain to run along 6.5")) X 6.5 IN (+ .0620/- .0000 IN (grain to run along 6.5")) - ALUMINUM PLATE SAW					
Purchase Order No 12027		Part Number		Ordered Qty 30 PCS		Invoice Qty 30 PCS		
Delivery No. 29907333		Mill	Heat Number 492249A8	Mech Id	PCS 30	Width (IN)	Length (IN)	Shipped Qty (LBS) 273.43

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:

Date:

SHIP TO:

A M CASTLE & CO
3400 NO. WOLF ROAD
FRANKLIN PARK, IL 60131

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

SOLD TO:

AM CASTLE & CO- SOLD TO
3400 NO. WOLF ROAD
FRANKLIN PARK, IL 60131

CERTIFIED TEST REPORT

Serial Number

4184855

CUSTOMER PO NUMBER: 36577		WORK PACKAGE:	CUSTOMER PART NUMBER: 8641 AMC A96061-161		SHIP RUN/LOAD: 101731/11	GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1093456	LINE ITEM: 4	SHIP DATE: 12-FEB-2010	ALLOY: 6061	CLAD: BARE	TEMPER: T651	PRODUCT DESCRIPTION: KaiserSelect® Precision Plate	
WEIGHT SHIPPED: 11172 LB	QUANTITY: 8 PCS EST.	B/L NUMBER: 2026034		GAUGE: 2.0000 IN	DIAMETER/WIDTH: 48.500 IN	LENGTH: 144.500 IN	

Certified Specifications

AMS 4027/RevN
ASTM B 209/Rev07

AMS-QQ-A-250/11/RevA

ASME SB 209/Rev2004

Test Code: 1511

Test Results

8
10/16/17

Lot: 492222A5 Cast 765

Drop 76

Ingot 4

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	48.5 : 48.6 (334 : 335)	43.9 : 43.9 (303 : 303)	13.5 : 13.9

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.68	0.5	0.30	0.09	1.0	0.19	0.16	0.02	0.01	0.00	TOT 0.04

Lot: 492249A8 Cast 765

Drop 73

Ingot 2

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	48.0 : 48.2 (331 : 332)	44.2 : 44.7 (305 : 308)	13.5 : 14.0

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.69	0.5	0.28	0.10	1.0	0.17	0.12	0.01	0.01	0.00	TOT 0.04

**KAISER
ALUMINUM**Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586**CERTIFIED TEST REPORT**Serial Number
4184855

Lot: 492250A6 Cast 765

Drop 73

Ingot 3

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
T651		LT / 2 (Min:Max)	49.0 : 49.0 (338 : 338)	44.2 : 44.4 (305 : 306)	13.0 : 14.9

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.69	0.5	0.28	0.10	1.0	0.17	0.12	0.01	0.01	0.00	TOT 0.04

ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
6061 MIN	0.40	0.0	0.15	0.00	0.8	0.04	0.00	0.00	0.00	0.00	EACH	0.05
MAX	0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15	0.05	0.05	TOT	0.15

Aluminum Remainder

TEST NOTES

6061 sheet or plate certified to AMS 4025, AMS 4026, or AMS
4027 also meets applicable requirements of AMS-QQ-A-250/11,
Rev.A.

Castle Metals FP

492249 A8

HEAT NUMBER

MECHANICAL ID

ITEM CODE

LOT NUMBER

PO NUMBER

RECEIPT DATE

SUPPLIER

SPECIFICATION

LCS

COMMENT

APPROVED

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.

BILL POYNOR, LABORATORIES SUPERVISOR

